SUMMARY OF THE
FIELD MEASUREMENTS COMMITTEE MEETING
JUNE 30, 1999

The Field Measurements Committee of the National Environmental Laboratory Accreditation Conference (NELAC) met on Wednesday, June 30, 1999, at 8:30 a.m. Eastern Daylight Time (EDT) as part of the Fifth NELAC Annual Meeting in Saratoga Springs, NY. The meeting was led by its chair, Dr. Barton Simmons of the California Environmental Protection Agency (Cal/EPA). A list of action items is given in Attachment A. A list of participants is given in Attachment B. *The purpose of the meeting was to review items considered since the last meeting, complete the agenda for this meeting, and solicit ideas from the floor on all aspects of field measurements and sampling.*

BRIEF HISTORY OF FIELD MEASUREMENTS COMMITTEE

A vote will be taken on July 1, 1999 to create a standing committee to be known as the Field Activities Committee. The committee will be created to deal with both field measurements and sampling concerns. The issue of whether to certify an individual rather than a field activity was an earlier topic for this committee. A survey was conducted and responses favored the preparation of standards for field activities. There was much less support for certifying individuals. This approach would also cause fewer problems with the existing standards which emphasize laboratory accreditation.

Field sampling versus field measurements was another topic of debate in past meetings. The Environmental Laboratory Advisory Board (ELAB) and the NELAC Board of Directors have both recommended that the committee forge ahead with outlining and preparation of field measurements standards and gather information on problems associated with sampling. Setting standards for sampling will be considered at a later date. Thus, the committee is on two tracks -- field measurements and field sampling. Creation of a standing committee for field activities was yet another topic for the past few years. This proposal was formally announced at the Fourth NELAC Annual Meeting and will be voted on at the Fifth NELAC Annual Meeting during the voting session on July 1, 1999. If the new committee is created, the board has recommended a 2-month period for receiving nominations. With the concurrence of the NELAC chair, the present *Ad Hoc* committee would continue to operate until such time that the new committee members are selected and appointed by the Board of Directors. A committee chair will be elected by the appointed members.

ISSUES FOR THE NEW STANDING COMMITTEE

Nominations to the committee are encouraged and a wide range of disciplines will be needed. The existing standards will be used as much as possible, with modifications made to reflect their use in field activities. The new committee will work closely with the committees which developed the existing standards. For instance, Section 4.1.2 of the Accreditation Process Committee's standard concerns mobile laboratories and how they should or should not be accredited. New definitions will need to be added to the glossary to define mobile laboratories and auxiliary mobile laboratories, among other definitions. One task for the committee will be to define what a

temporary facility is and what standards should apply to it. The term "mobile laboratory" does not necessarily imply it is a wheeled vehicle as certain portable analyzers may also be included. In addition, emission monitoring and ambient air sampling will need to be considered. All of these topics will need to be discussed. Adding the definition of sampling (and the implications it creates for existing standards) will lead to many issues needing resolution. The committee asked for input, dialogue, and outreach efforts from today's participants and their associates who were unable to attend the meeting.

In the discussion that followed, a representative from Oregon stated that they have up to 40 sites that collect samples and are in use more than 90 days continuously. States vary in accreditation of such facilities and the question of whether they fall within the scope of NELAC may have to be considered. Another scenario involves unattended monitors that may be part of an accredited laboratory. Since the unit is not a laboratory, it may not need to be accredited. Yet other States, Maine for example, require accreditation of such facilities. It will be up to the States to decide whether to require NELAP accreditation for such facilities.

The Accreditation Process Committee's concept of "work cells" needs to be considered by the Field Measurements Committee. The need for accreditation of survey samplers will have to be considered. If the data are going to stand on their own for compliance purposes, the field activity generating the data may need accreditation. Again, it is up to the States to decide when NELAP accreditation is required for measurements involving survey devices such as geoprobes, immunoassays, Photovacs, etc.

The comment was made that the anticipated new committee's work is critical to the regulated community and should include topics beyond water and source sampling that are presently being considered.

SCHEDULE FOR DEVELOPMENT AND IMPLEMENTATION OF FIELD STANDARDS

The chair stated that the committee is moving ahead with outlining and developing field measurements standards based on input it has received from the NELAC Board and ELAB. It will be necessary for the new committee to develop a good interim standard, starting with source emissions, prior to the Fifth NELAC Interim Meeting in December 1999. Input will be needed from the affected communities. NELAC has historically focused on fixed laboratory issues. Participation will also be needed from the emissions measurements community and, eventually, from all field measurement interests. By October 1999, the next draft of the standard should be nearly complete and by November 1, 1999, a draft Field Measurements standard is to be posted on the NELAC Website. Participants were asked to participate in this process and will be asked for information on the standards as they are developed. Participants were also asked to offer nominations, including self-nominations, for membership on the new committee. Although committee membership is limited to10, many other participants will be needed to staff sub-committees as the work topics broaden to include areas such as *in situ* or on-site scoping, survey, or screening studies of mixed waste, hazardous waste, radioactive species, etc. It was suggested that perhaps a survey could be taken to choose a top five list of work topics. Some of the topics listed included hazardous waste; radioactivity; soil gas; pH, conductivity, and dissolved oxygen measurements done by volunteer groups such as school students; heterogeneous waste; estuary

and stream sampling programs (Delaware); and unattended continuous monitoring of ambient air (with respect to the organization, not the instrument itself). Selection of committee work topics will become an agenda item for future meetings.

It was requested that the topic of field sampling be kept separate from field measurements and that both topics be given equal emphasis. It was also noted that it might be appropriate to consider screening studies separately from detailed field analyses. It was noted that if the resulting data are to be used for compliance purposes, accreditation becomes necessary. An accredited laboratory could oversee activities of volunteers, including training and provision of standard operating procedures (SOPs). Another participant reminded the audience that NELAC was created to accredit organizations providing reportable data for compliance, not scoping or screening data. However, future field sampling and analysis standards could be used in studies done by volunteer groups. Their use would add credibility to these types of field testing. Beach front testing and chlorine testing are currently big issues in South Carolina and are often done with volunteer labor.

The concept of credible evidence will need to be considered by the committee. Because volunteer data are often published there may be a need for guidance or standards for two distinct areas: (1) scoping or survey studies and (2) data intended to support compliance issues. However, survey studies do not necessarily imply less credible data. The U.S. Geological Survey (USGS) does many high quality surveys and Australia and New Zealand have been accrediting sampling for some years now.

OUTLINES OF GENERAL STANDARDS FOR FIELD ACTIVITIES AND SOURCE EMISSIONS STANDARDS

Mr. John Hosenfeld was asked to review Appendix A, Accreditation and Qualification for the Measurement of Source Emissions, which is proposed as an attachment to a Field Activities standard when it is written. A draft of the appendix was distributed to the audience. Some of the participants' comments are listed below according to the major subsections of the appendix.

1. Policy and Procedure

First priority will be the development of field sampling standards, in particular, Accreditation and Qualifications for the Measurement of Source Emissions (MSE). Mr. Hosenfeld gave a brief history of the work he has done for the USEPA and the Source Sampling Society. A standard based on ISO Guide 25 had been written prior to NELAC's formation. This standard was used as a starting point for this appendix. The schedule for completion of the sampling standard is ambitious. The focus will be on the existing NELAC Standards and their maximum use. Appendices to the future field sampling standard would include source emissions, biological sampling, and so on. Additions to Table 1 of the outline, under the topic Application Package, would be a quality system plan. Under the On-site Assessment topic, a key component would be development of a checklist, and for the Qualified Individual Tester column of Table 1, there would be a qualifications examination for at least one (or more) source sampling team leader.

2. Proficiency Testing (PT) Program

With regards to the availability of PT materials for source sampling, Ms. Laura Autry of the USEPA, said some were available from her office. Specialty gas manufacturers or suppliers are also close to being able to provide PT materials for use at source sampling field sites. An important point is how to go about conducting proficiency tests at a field site. Questions that have to be considered include whether it would be considered an audit type function and whether or not the overall quality of the system can be determined.

3. On-site Assessment

There is a need for a standard which would spell out how to prepare for and set up a practical method for on-site assessment(s) at field measurement sites.

Qualification of Crew Chief and Source Testers

Some of the questions that were asked by participants included determining who will qualify the individual testers mentioned in Table 1 of the Appendix. The standards (to be written) will emphasize personnel training, experience, etc. Since States cannot certify individuals, a laboratory would want to send an experienced individual out as crew chief or leader of a source sampling team. No certificate will be issued, however. Section 5.2.1.6 of the Appendix should be deleted. A qualified individual in the field would be needed to lead the team, and there needs to be some mechanism to evaluate the abilities of the field team leader. The USEPA has some example examinations that should be easily passed by someone who has been on several source testing trips and worked under the guidance of an experienced team leader.

Work Cell Concept

The Quality Systems Committee is considering the work cell concept. This concept may also apply to field source sampling work. The Field Activities Committee intends to use as much of the other standards as possible, supplementing them where necessary.

Checklists

Many of the general oversight and assessment approaches are given in the existing standards. At the present time, checklists are not an official part of the standards, but the information that is included in the checklists needs to be incorporated into the standards.

SOPs

SOPs are also important. An assessment that an organization has SOPs and will be following them needs to be made. Available SOPs should be listed or referenced in the Application Package and they should be available prior to conducting any on-site assessment. SOP preparation should be the responsibility of the fixed-base laboratory. Another question for consideration would be determining if a testing group has an SOP and if it is being followed. Based on today's meeting, Appendix A to the Field Activities standard will need to be revised.

COMMUNICATION STRATEGY

A satellite broadcast of the video, *NELAC*, was made throughout the country. A number of workshop and seminar presentations have been given. Other ideas or other organizations that should be brought in to help with the development of the measurement, and later on, the sampling standards, need to be considered. It is unknown at this time whether or not there is an organization representing field sampling personnel. Sampling personnel are often clients of laboratories and could be contacted through the laboratories. ACGIH (American Conference of Governmental Industrial Hygienists, Inc.) contacts may be useful in reaching field measurement personnel. Other routes to sampling personnel would be through the American Industrial Hygiene Association (AIHA) and professional geology or engineering groups. The Air & Waste Management Association (AWMA), the American Groundwater Association, and persons who are AWMA Qualified Environmental Professionals (QEPs) are yet other ways. Home inspectors for lead are also potential contacts. The Steel Structures Society (now called the Society for Protective Coatings) may also be a contact.

Sampling Problem Paper

The white paper, "Is There a Need for Sampling Standards?" was distributed and discussed. The chair asked the audience to comment on any additional sources of sampling errors they have encountered. Any documentation on this subject should be sent to Dr. Simmons. The Commonwealth of Virginia has disallowed many samples because they were collected inappropriately and the Maine drinking water program believes that up to 50 percent of their samples may be taken or handled incorrectly. The Regulatory Coordination Committee has a draft document that may offer other examples of sampling errors and how to avoid them. The ethical considerations of who should be allowed to collect samples also needs to be considered. An example was cited of a home inspector taking samples, reporting problems, and then being given no more inspections jobs by realty agencies. Some sampling, such as a farmer testing soil in a field or a homeowner checking water quality, may not require accreditation. Regulators bear some responsibility and need to educate people in how to correctly take samples. An example of tremendous variations in portable X-Ray Fluorescence (XRF) sampling results of lead-containing painted walls was cited as an example of where trained personnel, following SOPs, still had problems.

Adjournment

The chair adjourned the meeting at 12:00 noon. Dr. Simmons was thanked by the committee and the audience for his years of service on the *ad hoc* committee.

Attachment A

ACTION ITEMS
FIELD MEASUREMENTS COMMITTEE MEETING
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Item No.	Action	Date to be Completed
1.	Conduct an overview of the standards; look into the future. (committee)	12/1/99
2.	Define "laboratory" again and consider what accreditations should be required. (committee)	12/1/99
3.	Look at work cell definition and its applicability to field measurements. (committee)	12/1/99
4.	Consider all suggestions for standards content, including how they may help with survey sampling. (committee)	12/1/99
5.	Prioritize areas of interest. (Simmons)	11/1/99
6.	Revise Appendix A based on input. (Hosenfeld)	11/1/99
7.	Revise the sampling standard paper. Take it to ELAB and the board again. Who are the stakeholders and who should be involved in the standards development? (Simmons)	11/1/99
8.	Update and include the outreach paper in the next set of minutes. (Simmons)	8/1/99

Attachment B

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FIELD MEASUREMENTS COMMITTEE MEETING
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